

Notice of Allowability	Application No.	Applicant(s)	
	10/750,436	DEB ET AL.	
	Examiner	Art Unit	
	MARK A. FLEISCHER	3624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendments of 30 November 2010.
2. ☒ The allowed claim(s) is/are 1,2, 4, 5, 9,11-13, 15, 16, 21-24, 26-30 and 32-34.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>24 and 28 Feb. 201</u> . 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other ____. |
|---|--|

/Mark A Fleischer/
Examiner, Art Unit 3624

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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this Examiner's Amendment was given in a telephone interview with Aaron Reed on 24 February 2011 and 28 February 2011.

Amendments to the Claims

3. This listing of claims will replace all prior versions and listings of claims in this application.

1. (Currently Amended) A One or more computer-readable storage media having computer-executable instructions tangibly embodied thereon that, when executed by a computing device having a processor provide a system that facilitates task processing, the system comprising one or more computing devices having a processor and a memory and configured to provide:

a bulk component that periodically, concurrently processes in a bulk mode, a plurality of eligible accounts with a set of dependent tasks, wherein a first set of eligible accounts is fetched for bulk processing based on one or more first preset criteria for a first task in the set of dependent tasks, and a second set of eligible accounts is fetched for bulk processing based on one or more second preset criteria for a second task in the set of dependent tasks, wherein the first set of eligible accounts, the first task, and the first preset criteria are not identical to the second set of eligible accounts, the second task, and the second preset criteria respectively, and wherein the tasks in the set of dependent tasks include accounting operations to be completed for the accounts in the plurality of eligible accounts; [[and]]

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a removal component that removes an account from the eligible accounts and from bulk processing as an errored account ~~[[if]]~~ when an error is associated therewith, wherein the errored account is made ineligible for fetching for future bulk mode processing; and

an error component that processes the errored account to resolve the error associated therewith,

wherein the dependent tasks processed on a first day must be processed error-free before the same tasks can be processed on a succeeding day, and

wherein the system is restrained to keep utilization of system resources under a first predetermined threshold when a number of dependencies associated with an account are below a second threshold, the first predetermined threshold defining a limit on the use of system resources.

2. (Previously Presented) The ~~media~~ system of claim 1, wherein the tasks are processed sequentially against the plurality of eligible accounts according to task dependencies.

3. (Canceled)

4. (Previously Presented) The ~~media~~ system of claim 1, wherein the errored account is merged back into bulk mode processing by the bulk component when the error associated therewith has been resolved.

5. (Previously Presented) The ~~media~~ system of claim 1, wherein the errored account is merged back into bulk mode processing only when the errored account has been resolved temporally with bulk mode processing of the bulk component.

6. (Canceled)

7. (Canceled)

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8. (Canceled)

9. (Previously Presented) The ~~media~~ system of claim 1, wherein the system further comprises a catch-up component for real-time processing of an account.

10. (Canceled)

11. (Previously Presented) The ~~media~~ system of claim 1, wherein the plurality of eligible accounts is processed in parallel by one or more computing devices.

12. (Previously Presented) The ~~media~~ system of claim 1, wherein the plurality of eligible accounts is processed in parallel by different threads of execution on a single computing device.

13. (Previously Presented) The ~~media~~ system of claim 1, wherein the plurality of eligible accounts is processed in accordance with an access control list.

14. (Canceled)

15. (Currently Amended) A system that facilitates task processing, comprising one or more computing devices having a processor and a memory and configured to provide:

a bulk component that periodically processes a plurality of eligible accounts with a set of dependent tasks, wherein a first set of eligible accounts is fetched for bulk processing based on one or more first preset criteria for a first task in the set of dependent tasks, and a second set of eligible accounts is fetched for bulk processing based on one or more second preset criteria for a second task in the set of dependent tasks, wherein the first set of eligible accounts, the first task, and the first preset criteria are not identical to the second set of eligible accounts, the second task, and the second preset criteria respectively, and wherein the tasks in the set of dependent tasks include accounting operations to be completed for the accounts in the plurality of eligible accounts;

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a removal component that removes an account from the eligible accounts as an errored account [[if]] when an error is associated therewith, wherein the errored account is made ineligible for fetching for future bulk processing;

an error component that processes the errored account to resolve the error associated therewith, now a resolved account, merges the resolved account with the eligible accounts for bulk processing by the bulk component, and identifies the resolved account as eligible for fetching for future bulk processing, wherein the resolved account is merged with the eligible accounts for bulk processing when processing of the resolved account is temporally aligned with the bulk processing; and

a catch-up component that facilitates real-time processing of an account, wherein processing of the account is brought up-to-date to a specified date that is temporally equal to or ahead of bulk processing of the plurality of eligible accounts,

wherein the bulk component repeatedly processes the errored account up to a predetermined number of attempts before the errored account is removed by the removal component for error processing, and

wherein the system performs periodic processing of subscriber accounts.

16. (Previously Presented) The system of claim 15, wherein the tasks are processed sequentially against the plurality of eligible accounts according to task dependencies.

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Previously Presented) The system of claim 15, wherein the bulk component and the error component process accounts concurrently.

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22. (Currently Amended) One or more computer-readable storage media having computer-executable instructions tangibly embodied thereon that, when executed by a computing device having a processor, perform a method of processing tasks, the method comprising:

fetching a plurality of sets of eligible accounts for which a different respective task is to be processed in bulk for each of the sets of eligible accounts, each task including a unique set of criteria based upon which the eligible accounts are selected for inclusion in a respective set;

periodically processing in bulk, via a computing device having a processor, each of the plurality of sets of eligible accounts with the respective tasks to keep the one or more eligible accounts synchronized;

reprocessing one of the one or more eligible accounts from the plurality of sets of eligible accounts when the one eligible account exhibits an error, wherein the one eligible account is reprocessed up to a predetermined number of attempts;

removing ~~the one of the one or more eligible account accounts from the plurality of sets of eligible accounts~~ as an errored account ~~[[if]]~~ when the one eligible account exhibits an error after reprocessing;

identifying the one eligible account as ineligible for fetching for future bulk processing; and

error processing the errored account with the set of tasks to resolve the error;

wherein processing of the respective tasks is restrained to keep utilization of system resources under a predetermined threshold, the predetermined threshold defining a limit on the use of system resources.

23. (Previously Presented) The media of claim 22, wherein the method further comprises merging the errored account that has been resolved with the one or more eligible accounts for further processing in bulk.

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24. (Previously Presented) The media of claim 22, wherein the processing in bulk further comprises,

processing task dependency data related to the set of tasks;

maintaining system state data of the system;

generating an account level exception list of exceptions generated during the processing in bulk;

monitoring and reporting system processes related to at least bulk processing, removing an errored account; and

providing error handling related to an error generated by the errored account.

25. (Canceled)

26. (Previously Presented) The media of claim 22, wherein the method further comprises reprocessing the errored account before requiring manual intervention to initiate further reprocessing.

27. (Previously Presented) The media of claim 22, wherein the method further comprises predicting when subscription cycle end processing needs to be performed next.

28. (Currently Amended) A computer-implemented ~~computer-readable storage medium having computer-executable instructions tangibly embodied thereon that, when executed by a computer having a processor, perform a~~ method of periodic processing of subscription accounts, the method comprising:

fetching a plurality of eligible accounts for which a plurality of tasks are to be processed in bulk, each task including a unique set of criteria based upon which the eligible accounts are selected for inclusion in a respective set, and at least one of the respective sets including an eligible account that is not included in at least one other respective set;

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processing in bulk, via a first computing device having a processor, the sets of eligible accounts with their respective task periodically to keep the plurality of eligible accounts synchronized;

reprocessing, by a second computing device having a processor, one of the plurality of eligible accounts when the one eligible account exhibits an error, wherein the first and second computing devices are the same or different computing device;

removing ~~the one of the plurality of eligible accounts~~ account from bulk processing as an errored account ~~[[if]]~~ when the one eligible account exhibits an error after a predetermined number of attempts to reprocess the one eligible account;

identifying the errored account as ineligible for fetching for future bulk processing;

error processing the errored account with the set of tasks to resolve the error in the errored account, now a resolved account;

identifying the resolved account as eligible for fetching for future bulk processing;

and

merging the processing of the resolved account with the bulk processing when error processing and bulk processing are temporally aligned,

wherein processing of the respective tasks is restrained to keep utilization of system resources under a predetermined threshold, the predetermined threshold defining a limit on the use of system resources.

29. (Currently Amended) The ~~media~~ method of claim 28, wherein the method further comprises determining according to a predetermined threshold level when a second account that is dependent on a first account is considered inconsistent.

30. (Currently Amended) The ~~media~~ method of claim 29, wherein the method further comprises employing a classifier to automatically determine the threshold level that facilitates determining when a dependent account is inconsistent.

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31. (Canceled)

32. (Currently Amended) A system that facilitates the periodic processing of accounts, the system comprising: a computing device having a processor and a memory that includes computer-executable instructions embodied thereon that, when executed provide:

a first system group of one or more computing devices having a processor and a memory that processes a set of tasks against a plurality of accounts; and

a second system group of one or more computing devices having a processor and a memory that periodically processes the same set of tasks against the plurality of accounts; accounts,

wherein the first system group removes a first account in the plurality of accounts from processing and signals the second system group to bypass processing of [[a]] the first account in the plurality of accounts if when the first system group determines an error in the first account, [[and]]

wherein the first system processes group reprocesses the first account with up to a predetermined threshold number of attempts to resolve the error in the first account prior to signaling the second system group, and

wherein processing the set of tasks is restrained to keep utilization of system resources under a predetermined threshold, the predetermined threshold defining a limit on the use of system resources.

33. (Currently Amended) The system of claim 32, wherein the second ~~system~~ group signals the first ~~system~~ group to bypass processing of a second account of the plurality of accounts [[if]] when the second system group determines an error in the second account.

34. (Currently Amended) A One or more computer-readable storage media having computer-executable instructions tangibly embodied thereon that, when executed by a computing device

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~~having a processor, provide a system that facilitates task processing, the system comprising one or more~~
computing devices having a processor and a memory that are configured to provide:

a bulk component that periodically, concurrently bulk processes a plurality of eligible accounts with a set of dependent tasks and the bulk component identifies an account from the plurality of eligible accounts that has an error associated therewith as an errored account and repeatedly reprocesses the errored account up to a predetermined number of attempts;

a removal component that removes ~~an account from the eligible accounts as an the errored account if an error is associated therewith and~~ from bulk processing and identifies the errored account as ineligible for fetching for future bulk processing when the repeated reprocessing is unsuccessful;

an error component that processes the errored account to resolve the error associated therewith producing a resolved errored account, identifies the resolved errored account as eligible for fetching for future bulk processing, and merges the processing of the resolved errored account with bulk processing of the eligible accounts by the bulk component when the processing of the resolved errored account is temporally aligned with the bulk processing; and

a catch-up component that facilitates real-time processing of an account,

wherein the bulk component processes the errored account with up to a predetermined threshold number of attempts to resolve the errored account,

wherein the system is restrained to keep utilization of system resources under a predetermined threshold that defines a limit on the use of system resources.

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ALLOWANCE

4. The following is an Allowance in response to the Amendment submitted on 30 November 2010.
5. Claims 1, 15, 22, 28-30 and 32 - 34 are currently amended.
6. Claims 3, 6 – 8, 10, 14, 17 – 20, 25 and 31 are currently cancelled.
7. Claims 1, 2, 4, 5, 9, 11 – 13, 15, 16, 21 – 24, 26 – 30 and 32 – 34 are currently pending and allowed below.

REASONS FOR ALLOWANCE

8. The following is an examiner's statement of reasons for allowance.
9. The present invention is directed to a system for periodic and real-time processing of accounts that operates in two modes: a bulk mode and an error mode. A bulk component concurrently processes a set of eligible accounts with a set of dependent tasks, and a removal component removes one or more accounts from the eligible accounts if an error is associated therewith. The error mode is activated when an account encounters an error for a task in the bulk mode, and removes the account from bulk mode becoming ineligible for fetching in any future bulk-mode task processing. The closest prior art of Hanagan, et al. (US PgPub 20040133487 A1) and von Kaenel, et al. (US 7107285 B2) fail to teach or suggest either singularly or in combination the elements of
 - an error component that processes the errored account to resolve the error associated therewith,
 - wherein the dependent tasks processed on a first day must be processed error-free before the same tasks can be processed on a succeeding day, and
 - wherein the system is restrained to keep utilization of system resources under a first predetermined threshold when a number of dependencies associated with an account are below a second threshold, the first predetermined threshold defining a limit on the use of system resources.

as recited in independent Claims 1, 15, 22, 28, 32 and 34.

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10. Hanagan teaches a modular and 'convergent' customer care and billing system which provides a batch processing environment for handling customer billing and is capable of automatically processing the accounts in parallel. Hanagan however fails to teach the element of using a threshold to facilitate 'throttling' of the processing. von Kaenel teaches a real-time batch oriented data processing system for handling customer subscription accounts, but does not utilize the control element of a threshold to enable the throttling of the processing.
11. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Mark A. Fleischer** whose telephone number is **571.270.3925**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **Lynda Jasmin** whose telephone number is **571.272.6782** may be contacted.

The prior art made of record and not relied upon that is considered pertinent to applicant's disclosure are:

- Savage, et al. (US 7236950 B2) and pertains to account processing.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair> <<http://pair-direct.uspto.gov>>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free). Any response to this action should be mailed to:

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Alexandria, VA 22313-1450

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Examiner, Art Unit 3624

26 February 2011

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/LYNDA C JASMIN/

Supervisory Patent Examiner, Art Unit 3624